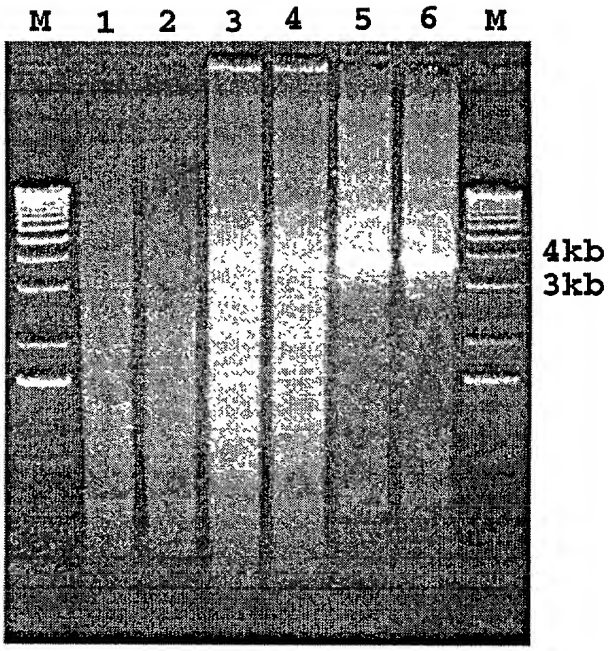
Fig. 1



```
Burma            GGEIGHQRPSVIPRGNPDANVDTLAAFPPSCQISAFHQLAEELGHRPVPVAAVLPPCPELEQGLLYLPQELTTCDSVVTFELTDIVHCRMAAPSQRKAVL 100
D11092 China     ...............................................A.................................................... 100
D11093 China     .............C.................................A.................................................... 100
HEV-T1 China     ..Q..QH.....R..TI.N.....D.......F..Y...........A.I................M......S...L..................R... 100
Hetian China     ...............................................A.................................................... 100
Hyderabad India  ...............................................A...................................................V 100
KS2-87 China     ...............................................A.................................................... 100
L25547 China     ...............................................A.................................................... 100
Madras India     ..................................V....G..........GV....R.............I.......................R.S..V 100
Mexico           ...V..............R...V........................A.......................AS........................... 100
Myanmar          .....................................................................G..A....................N...... 100
Nepal            ...............................................A.................................................... 100
SAR-55 Pakistan  ...............................................A.................................................... 100
Swine HEV USA    ...V..H...........Q.LG..Q..........Y...........A..................M.....VS...LV..................... 100
US1 USA          ...V.XH...........Q.LG..Q..........Y...........A..................M.....VS...LV..................... 100
US2 USA          ...V..H...........Q.LG..Q..........Y...........A..................M.....VS...LV..................... 100
X98292 India     ..................T............................A.................................................... 100
Avian HEV USA    LVRPDAAA.AGVL.A-..DT..G.LDI..AHTDV.AVLT..AI..A.LEL..IN..G.V.......M.AR.DGR.E..KLQ.S.T....L...TS.L..I 99

Burma            STLVGRYGGRTKLYNASHSDVRDSLARFIPAIGPVQVTTCELYELVEAMVEKGQDGSAVLELDLCNRDVSRITFFQKDCNKFTTGETIAHGKVGQGISAW 200
D11092 China     ........R............................................................F.............................. 200
D11093 China     .......PAG.......................................................................................... 200
HEV-T1 China     ........R.....E.A.T...G..NH...EL..IN.............................S.................................. 200
Hetian China     .....H..R........................H.................................................................. 200
Hyderabad India  ........R........................................................................................... 200
KS2-87 China     ........R........................................................................................... 200
L25547 China     ........R........................................................................................... 200
Madras India     T.......R......T....S.E....I..................................EHW.....................A...V......... 200
Mexico           ........R..R..D.G.T...A.......TL.R.TA.....F......................S...............................FR. 200
Myanmar          ........R........................................................................................... 200
Nepal            ........R.................................C.............................................V........... 200
SAR-55 Pakistan  ........R........................................................S.................................. 200
Swine HEV USA    ........R.....E.A.....E.......T.....A............................................................... 200
US1 USA          ........R.....E.A.....E.......T.....A........................................X...................... 200
US2 USA          ........R.....E.A.....E.......T....RA............................................................... 200
X98292 India     ........R.....................T..................................................................... 200
Avian HEV USA    N......KA....-PEVEY.LM.TI.Q.WHH...INPS.L.YA.MC...LS......LIVH...QDA.C..........A...LDDPV............ 198

Burma            SKTFCALFGPWFRAIEKAILALLPQGVFYGDAFDDTVF-SAAVAAAKASMVFENDFSEFDSTQNNFSLGLECAIMEECGMPQWLIRLYHLIRSAWILQAP 299
D11092 China     ......................................-............................................................. 299
D11093 China     ......................................-............................................................. 299
HEV-T1 China     .................E...A.APN......YE...L-A....G.PGCK......................I..........M......V......... 299
Hetian China     ......................................-.......R............................V........................ 299
Hyderabad India  ......................................-...........................................G................. 299
KS2-87 China     ......................................-............................................................. 299
L25547 China     ......................................-............................................................. 299
Madras India     .....P................................-....P........................................................ 299
Mexico           ....................S....A......Y..S..-.....G.SHA...................................V....AV......... 299
Myanmar          ......................................-............................................................. 299
Nepal            ......................................-.....................................G....................... 299
SAR-55 Pakistan  ......................................-............................................................. 299
Swine HEV USA    .................E......PNI.....YEES..-A...SG.GSC.......................VV................V......... 299
US1 USA          .................E......PNI.....YEES..-A...SG.GSC.......................VV................V......... 299
US2 USA          .................E......PNI.....YEES..-A...SG.GSC.......................VV................V......... 299
X98292 India     ......................................-............................................................. 299
Avian HEV USA    P..L.............HLV.G..P.YY...LYTEADLHRSVLC.PAGHL................V..D...EL.RRF...D.MVA...V..Y.L.V.. 298
```

Fig. 2A

```
Burma            KESLRGFWKKHSGEPGTLLWNTVWNMAVITHCYDFRDFQVAAFKGDDSIVLCSEYRQSPGAAVLIAGCGLKLKVDFRPIGLYAGVVVAPGLGALPDVVRF 399
D11092 China     .....................................L.............................................................. 399
D11093 China     .....................................L.............................................................. 399
HEV-T1 China     .............................A...E...LK.........V....D....RD................................T....... 399
Hetian China     .....................................L.............................................................. 399
Hyderabad India  ....L................................L........................................MR.................... 399
KS2-87 China     .....................................L.............................................................. 399
L25547 China     .....................................L.............................................................. 399
Madras India     .....................................L.............................................................. 399
Mexico           ................S..........I.A...E...L..........V...........GS...........A.......................... 399
Myanmar          .................................................................................................... 399
Nepal            .....................................L.............................................................. 399
SAR-55 Pakistan  .....................................L.............................................................. 399
Swine HEV USA    ....K......................I.A...E....R.........V....D....RN..A............Y................T....... 399
US1 USA          ....K......................I.A...E....R.........V....D....RN..A............Y................T....... 399
US2 USA          ....K......................I.A...E....R.........V....D...XRN..A............Y................T....... 399
X98292 India     .....................................L.............................................................. 399
Avian HEV USA    ..A...C...................T.LH.V.E.DRPS.LC.......V.V.ESV.AR.EGVS.V.D...M.DKTG.C.AFSNLLIF..A.VVC.LL.Q 398

Burma            AGRLTEKNWGPGPERAEQLRLAVSDFLRKLTNVAQ--MCVDVVSRVYGVSPGLVHNLIGMLQAVADGKAHFTESVKPVLDLTNSILCRVE 487
D11092 China     ...................................--..................................................... 487
D11093 China     ...................................--..................................................... 487
HEV-T1 China     ....S..................C...........--V......Q..................TI.........TI......S..IY... 487
Hetian China     ................K..................--..................................................... 487
Hyderabad India  ................DE..I..............--..................................................... 487
KS2-87 China     ...................................--.................................................S... 487
L25547 China     ...................................--.................................................S... 487
Madras India     ...................................--..................................................... 487
Mexico           ....S......D..........Q.....R......--I.E.......................TIG...........I....H..MH.S. 487
Myanmar          ...................................--..................................................... 487
Nepal            ...................................--................................................W.... 487
SAR-55 Pakistan  ...................................--..................................................... 487
Swine HEV USA    ....S..................C....G......--V.........................TI.........TI.........IQ... 487
US1 USA          ....S..................C....G......--V.........................TI.........TI.........IQ... 487
US2 USA          ....S..................C....G......--V.........................TI.........NI.........IQ... 487
X98292 India     ...................................--..........................T.......................... 487
Avian HEV USA    W....D.....DIQ.MQD.EQ.CK..VARVVTQGKEMLTIQL.AGY...EV.M.EVVW.A.K.C.AARETLVTNRL...N.SKE----D. 484
```

Fig. 2B

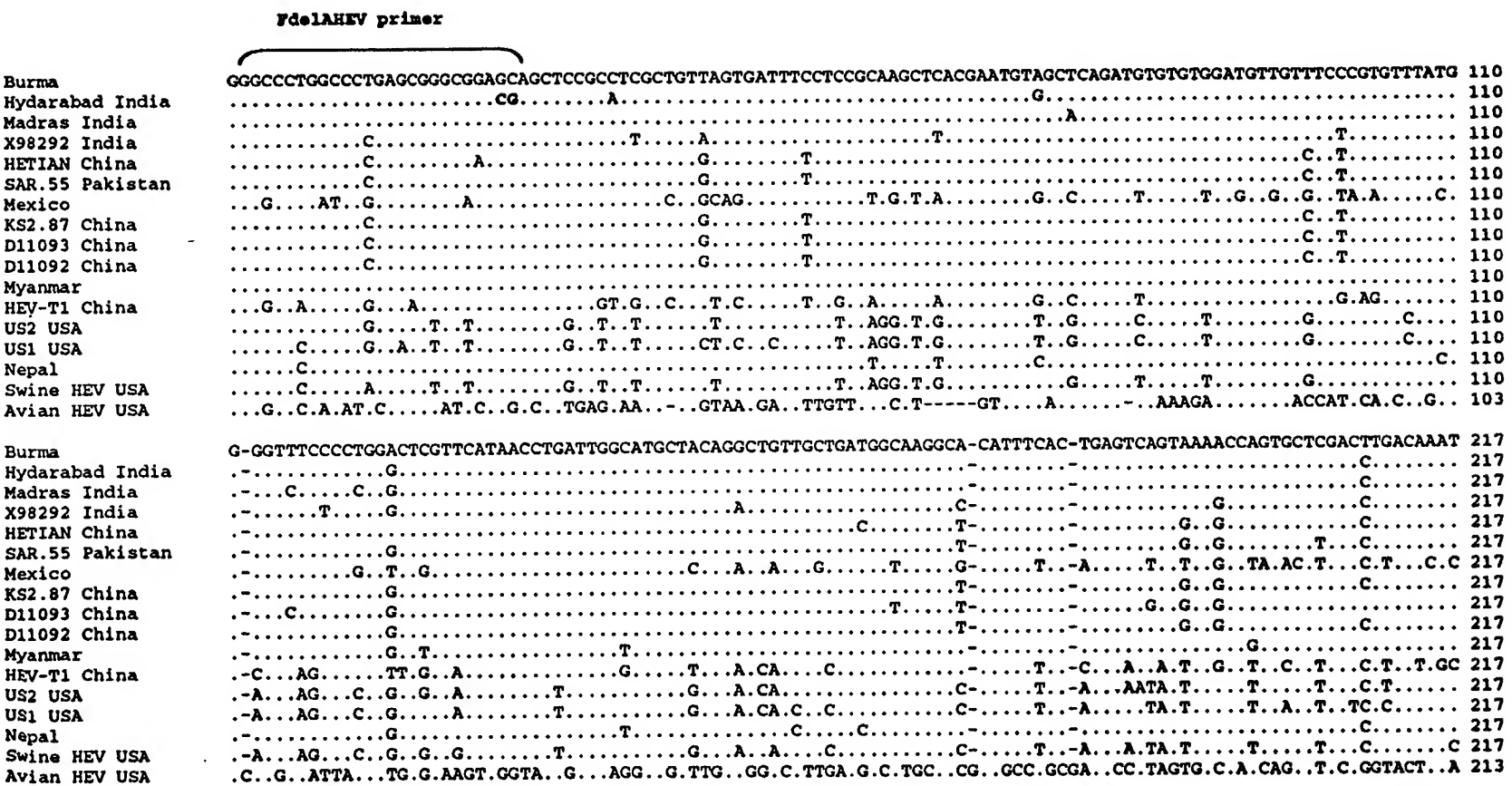


Fig. 3A

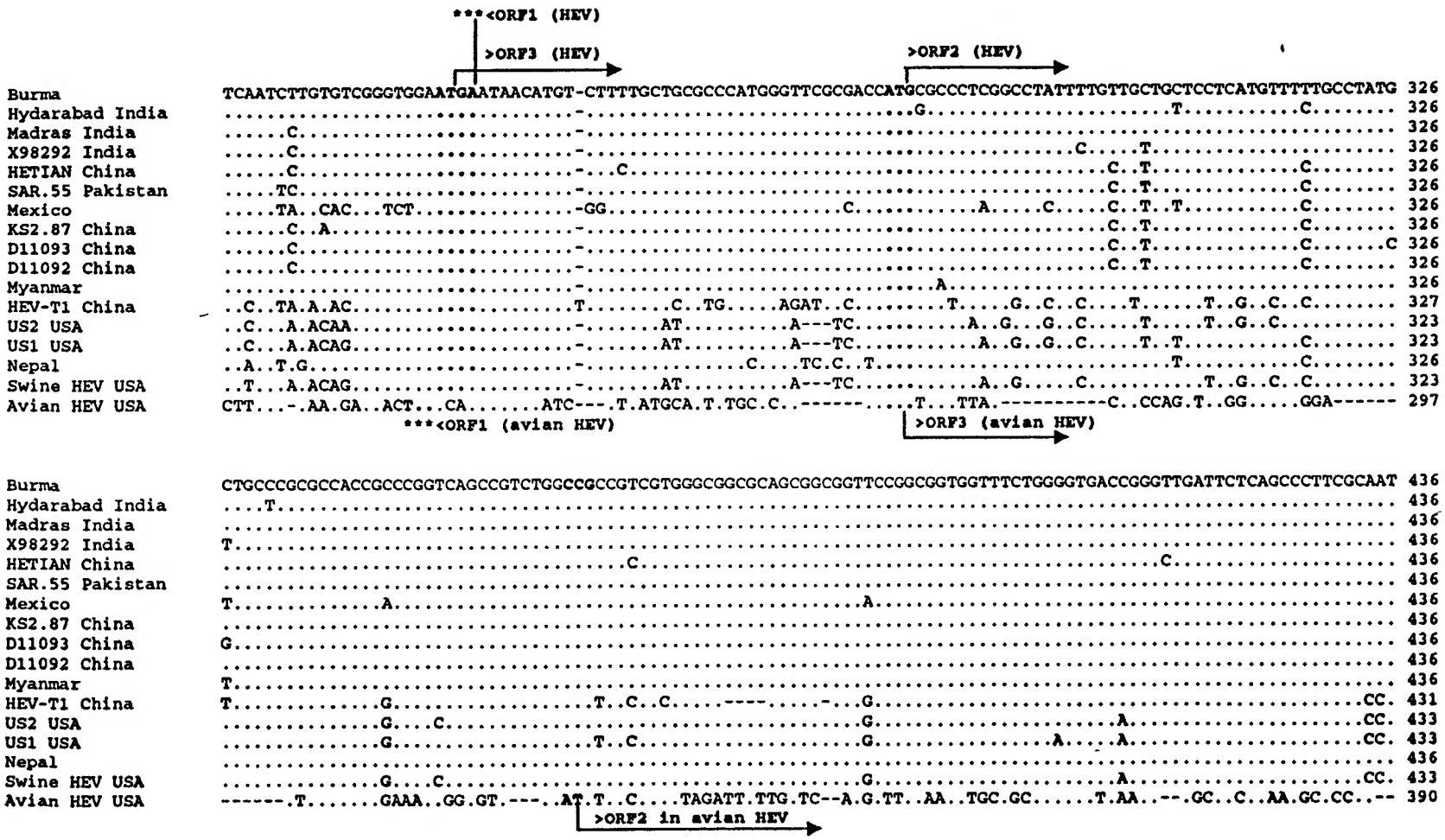

***<ORF1 (HEV)
>ORF3 (HEV)
>ORF2 (HEV)
Burma
Hydarabad India
Madras India
X98292 India
HETIAN China
SAR.55 Pakistan
Mexico
KS2.87 China
D11093 China
D11092 China
Myanmar
HEV-T1 China
US2 USA
US1 USA
Nepal
Swine HEV USA
Avian HEV USA
***<ORF1 (avian HEV)
>ORF3 (avian HEV)
>ORF2 in avian HEV

Fig. 3B

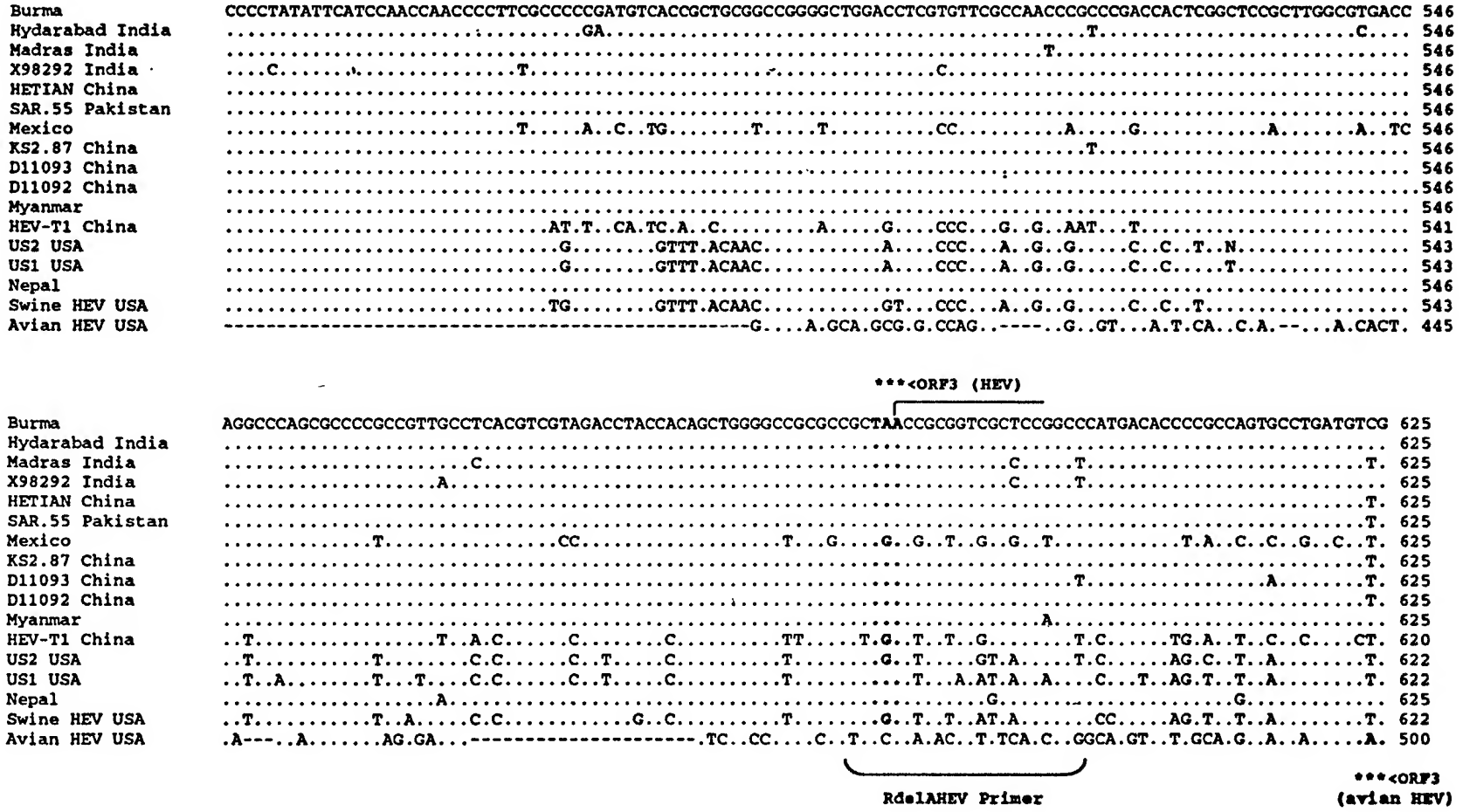


Fig. 3C

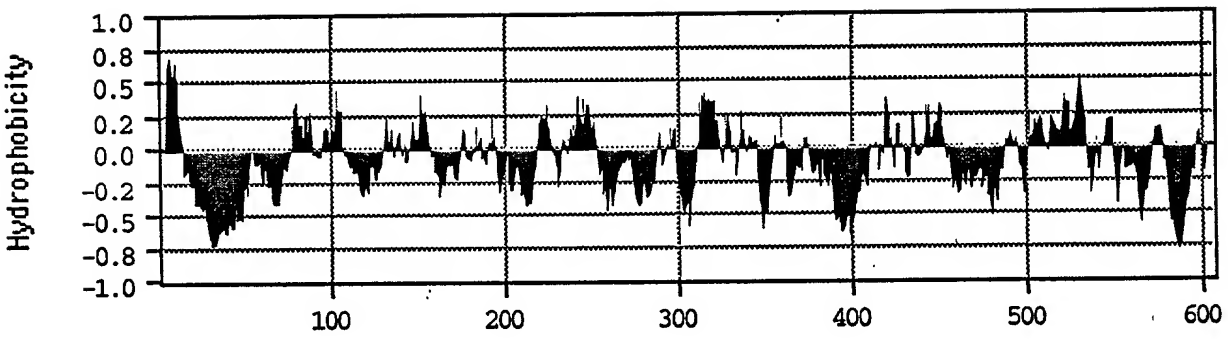

Hydrophobicity
1.0
0.8
0.5
0.2
0.0
-0.2
-0.5
-0.8
-1.0
100
200
300
400
500
600

Fig. 4

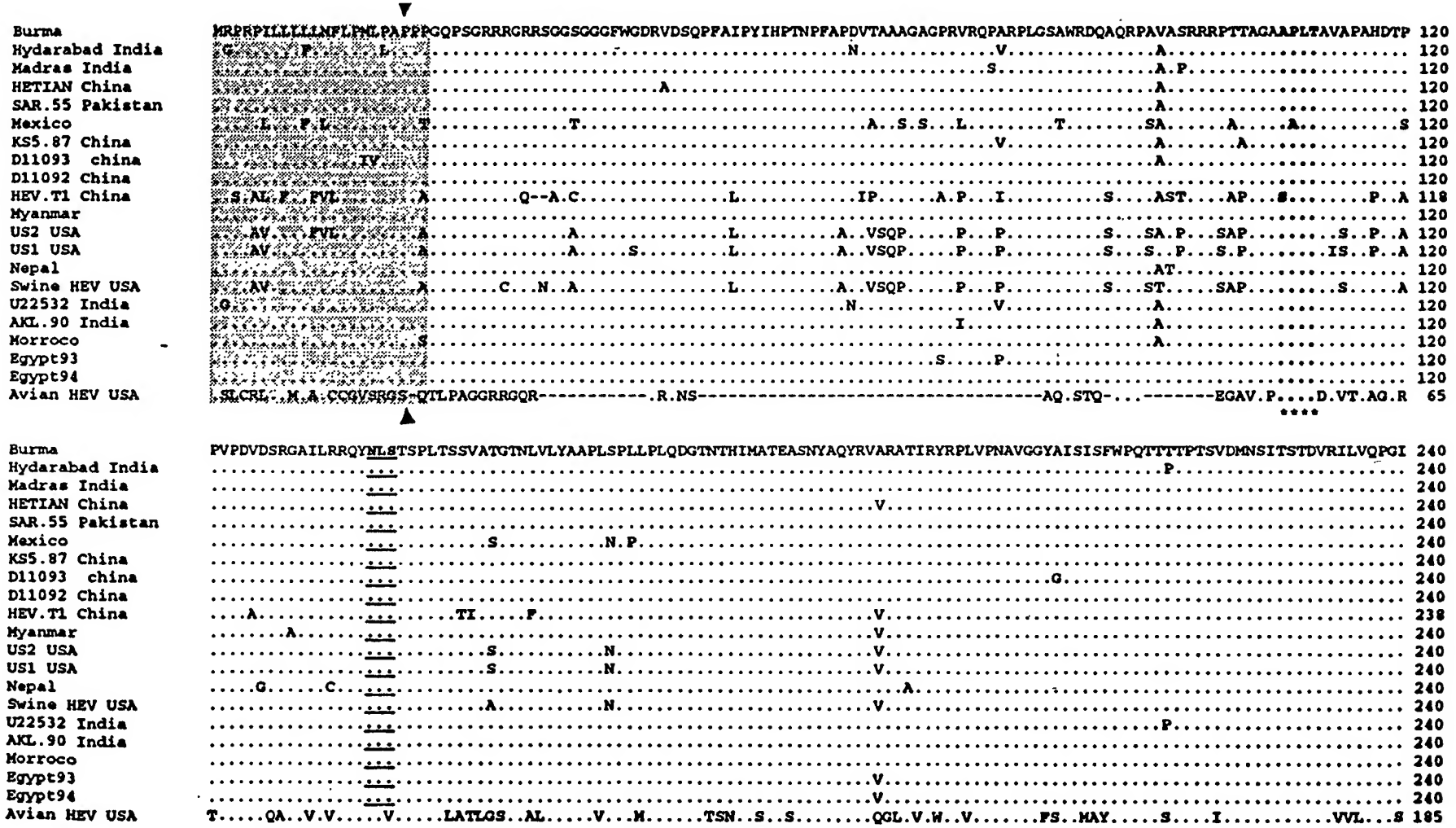

Burma
Hydarabad India
Madras India
HETIAN China
SAR.55 Pakistan
Mexico
KS5.87 China
D11093 china
D11092 China
HEV.T1 China
Myanmar
US2 USA
US1 USA
Nepal
Swine HEV USA
U22532 India
AKL.90 India
Morroco
Egypt93
Egypt94
Avian HEV USA

Fig. 5A

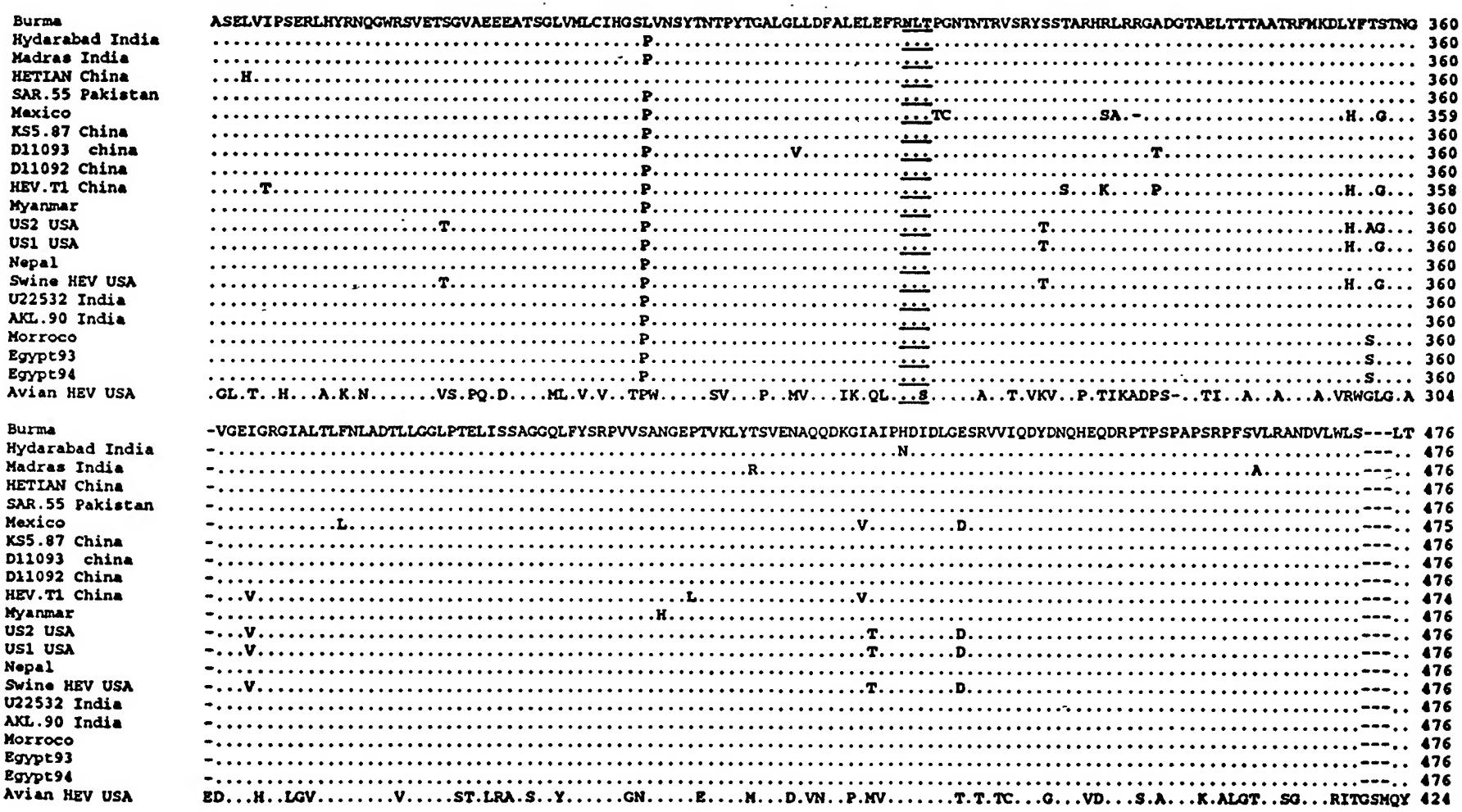


Fig. 5B

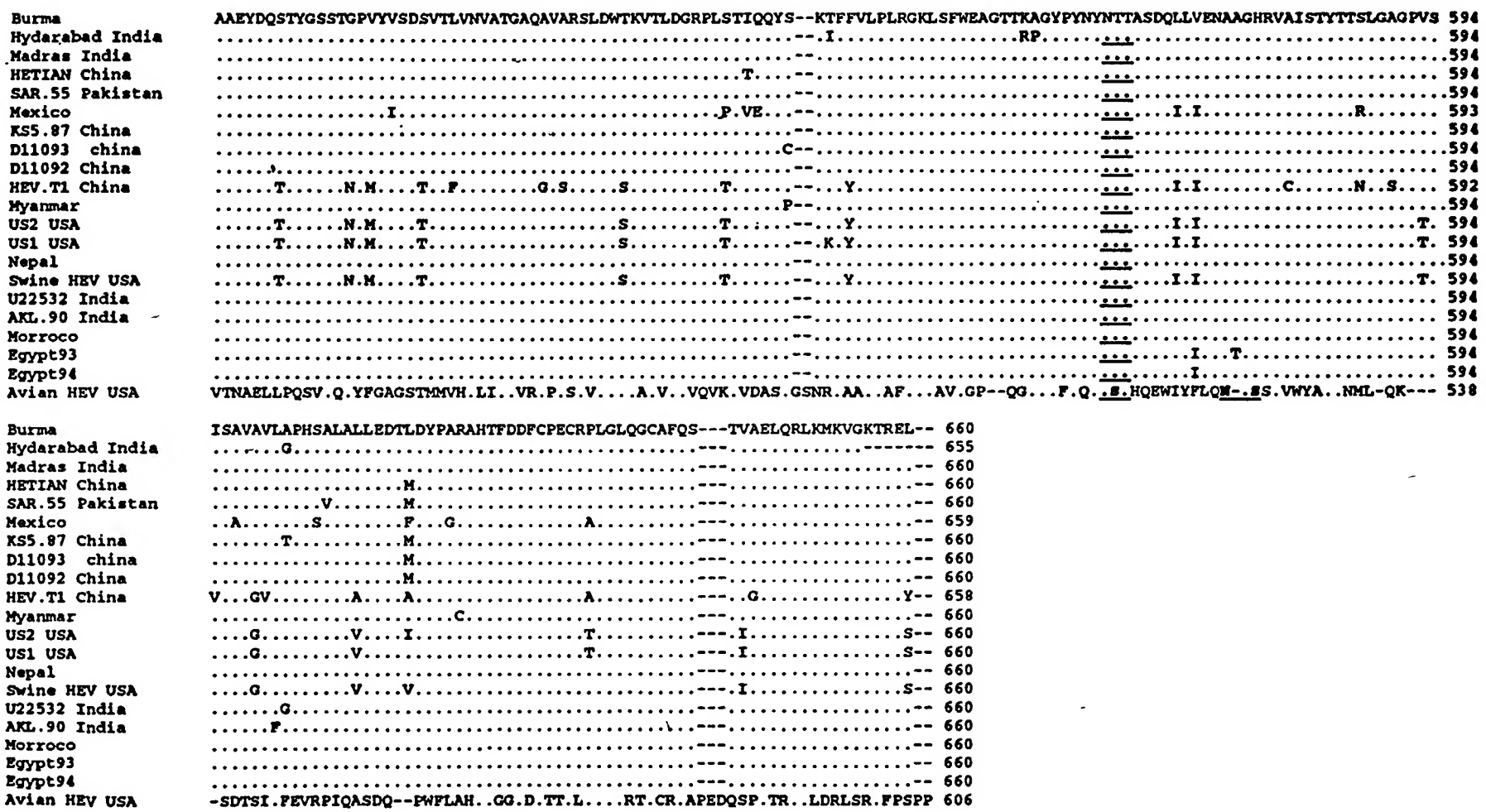

Burma AAEYDQSTYGSSTGPVYVSDSVTLVNVATGAQAVARSLDWTKVTLDGRPLSTIQQYS--KTFFVLPLRGKLSFWEAGTTKAGYPYNYNTTASDQLLVENAAGHRVAISTYTTSLGAGPVS 594
Hydarabad India 594
Madras India 594
HETIAN China 594
SAR.55 Pakistan 594
Mexico 593
KS5.87 China 594
D11093 china 594
D11092 China 594
HEV.T1 China 592
Myanmar 594
US2 USA 594
US1 USA 594
Nepal 594
Swine HEV USA 594
U22532 India 594
AKL.90 India 594
Morroco 594
Egypt93 594
Egypt94 594
Avian HEV USA VTNAELLPQSV.Q.YFGAGSTMMVH.LI..VR.P.S.V....A.V..VQVK.VDAS.GSNR.AA..AF...AV.GP--QG...F.Q..S.HQEWIYFLQN-.ES.VWYA..NML-QK--- 538
Burma ISAVAVLAPHSALALLEDTLDYPARAHTFDDFCPECRPLGLQGCAFQS---TVAELQRLKMKVGKTREL-- 660
Hydarabad India 655
Madras India 660
HETIAN China 660
SAR.55 Pakistan 660
Mexico 659
KS5.87 China 660
D11093 china 660
D11092 China 660
HEV.T1 China 658
Myanmar 660
US2 USA 660
US1 USA 660
Nepal 660
Swine HEV USA 660
U22532 India 660
AKL.90 India 660
Morroco 660
Egypt93 660
Egypt94 660
Avian HEV USA -SDTSI.PEVRPIQASDQ--PWFLAH..GG.D.TT.L....RT.CR.APEDQSP.TR..LDRLSR.FPSPP 606

Fig. 5C

```
Avian HEV USA   ACATGTCGTGGTTTTGGGGTTTTAGGTTGATTTTCTGTATCTGGGCGTAATTGCCCCTATGTTTAATTTA70
Burma           -------------------------..T....G..-----..T..-------....CT.C...C-.--G29
D11092 China    -------------------------..T....G..-----..T..-------....CT.C...C-.--G29
D11093 China    -------------------------..T....G..-----..T..-------....CT.C...C-.--G29
HEV-T1 China    -------------------------..T....G..-----..T..-------....CT.C.GCC..--G30
Hetian China    -------------------------..T....G..-----..T..-------....CT.C...C-.--G29
Hyderabad India -------------------------..T....G..-----..T..-------....CT.C.C.C-.--G29
L25547 China    -------------------------..T....G..-----..T..-------....CT.T...C-.--G29
Mexico          -------------------------..T....GGC-----..T..-------..A.CTAC..AT..C.G32
Myanmar         -------------------------..T..C.G..-----..T..-------....CT.C...C-.--G29
Nepal           -------------------------..T....G..-----..T..-------....CT.C.C.C-.--G29
SAR-55 Pakistan -------------------------..T....G..-----..T..-------....CT.C...C-.--G29
Swine HEV USA   -------------------------..A...C-..-----.TT.T-------G...CC.TCA..GC..C31
US1 USA         -------------------------..A...C-..-----.TT.T-------G...CC.TCGC.G..CT31
US2 USA         -------------------------..A...C-..-----.CT.T-------G...CC.TCG..G...C31
X98292 India    -------------------------..T....G..-----..T..-------....CT.C...C-.--G29

Avian HEV USA   TTGTGATTTTTATAACTGTTCATTTGATTATTTATGAAATCCTCCCATCTCGGGCATAGT          130
Burma           ...------C---------.T....C-.C....C..CGT...G.G.TC.CT.                65
D11092 China    ...------C---------.T....C-.CT...C..CGT...G.G.TC.CT.                65
D11093 China    ...------C---------.T....C-.CT...C..CGT...G.G.TC.CT.                65
HEV-T1 China    ..T------.C-------..T....C-CCT...C..CGTC..G.G.TC.CT.                68
Hetian China    ...------C---------.T....C-.C....C..CGT...G.G.TC.CT.                65
Hyderabad India ...------C---------.T....C-.C....C..CGT...G.G.TC.CT.                65
L25547 China    ...------C---------.T....C-.CT...C..CGT.T.G.G.TC.CT.                65
Mexico          C..--....CC-------..T....C-C.T...C.CGGTC..G.G.TC.CT.                74
Myanmar         ...------C---------.T....C-......C..CGT...G.G.TC.CT.                65
Nepal           ...------C---------.T....C-.CT...C..CGT...G.G.TC.CT.                65
SAR-55 Pakistan ...------C---------.T....                                           39
Swine HEV USA   C.----..GG.-------..T....C-......C..CTT...G.G.TC.CT..              72
US1 USA         C.----..GGC-------..T....C-.C....C..CTT...G.G.TC.CT..              72
US2 USA         ..----.CGC.-------..T....C-......C..CTT...G.G.TC.CT..              72
X98292 India    C..------C---------.T....C-.CT...C..CGT.T.G.G.TC.CT.                65
```

Fig. 6

Fig. 7

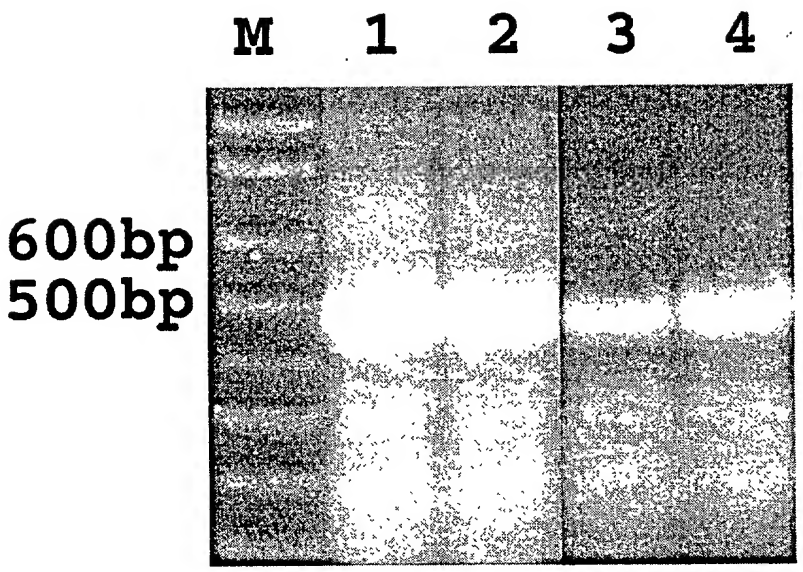


Fig. 8A

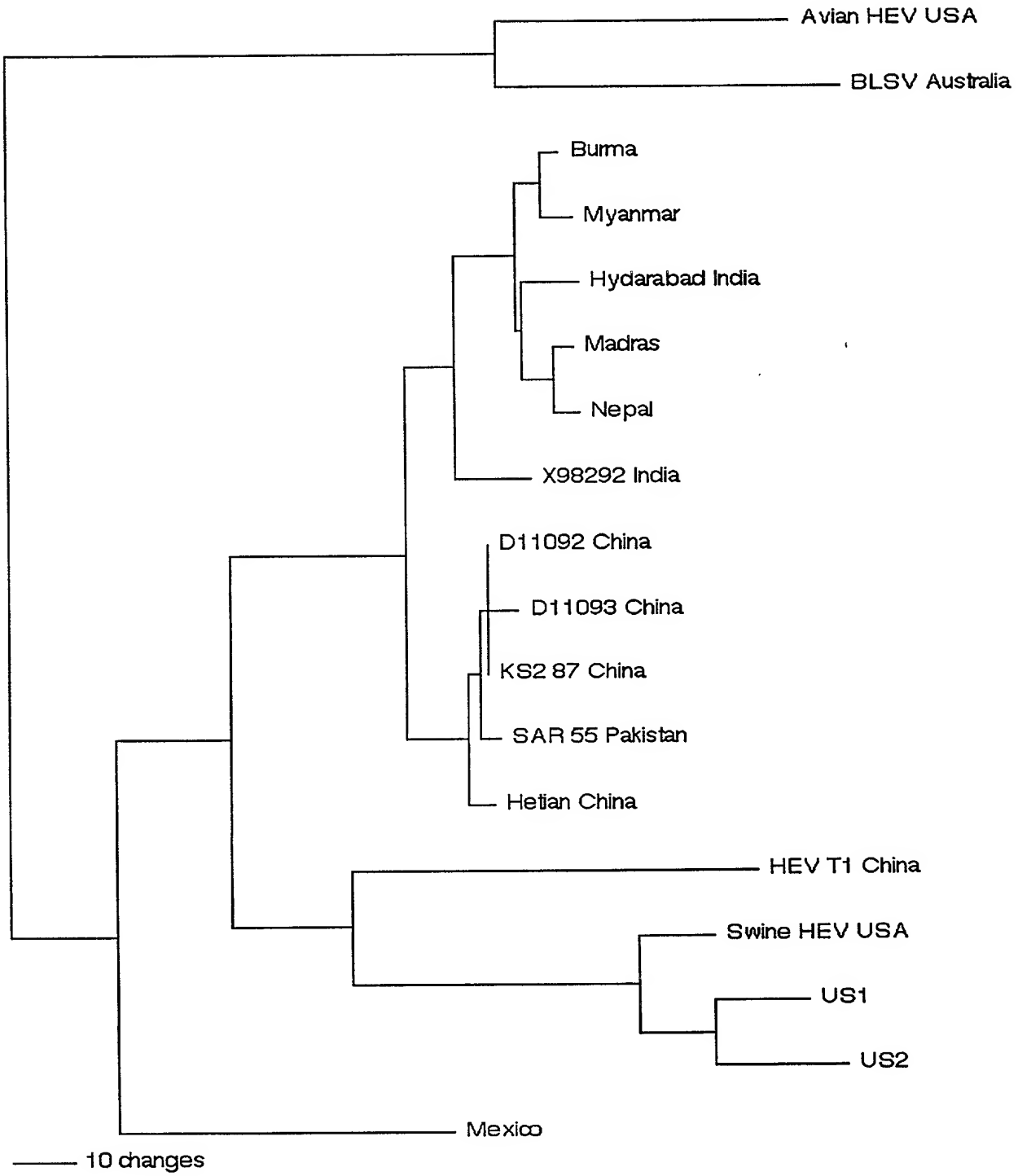

Avian HEV USA
BLSV Australia
Burma
Myanmar
Hydarabad India
Madras
Nepal
X98292 India
D11092 China
D11093 China
KS2 87 China
SAR 55 Pakistan
Hetian China
HEV T1 China
Swine HEV USA
US1
US2
Mexico
10 changes

Fig. 8B

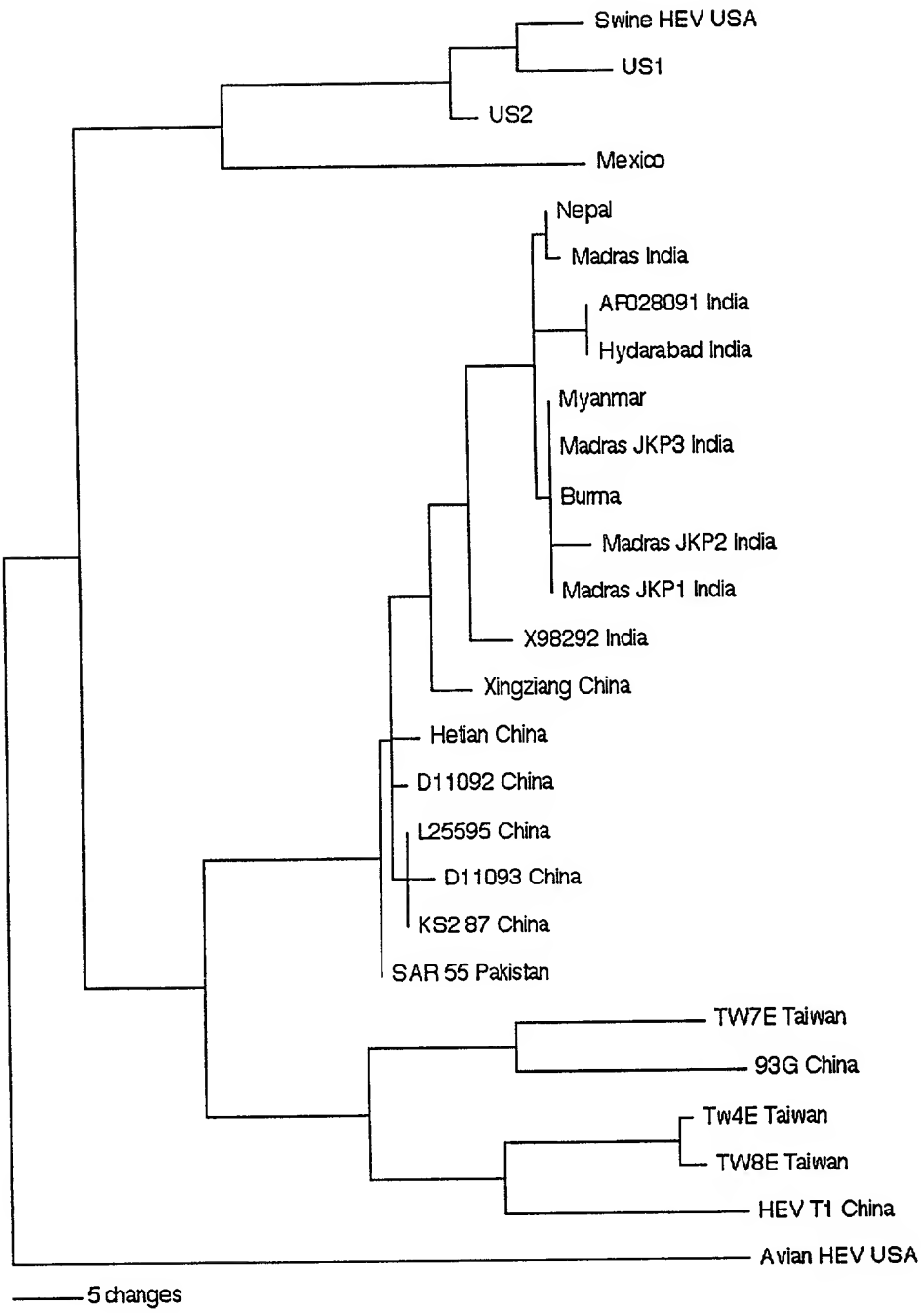

Swine HEV USA
US1
US2
Mexico
Nepal
Madras India
AF028091 India
Hydarabad India
Myanmar
Madras JKP3 India
Burma
Madras JKP2 India
Madras JKP1 India
X98292 India
Xingziang China
Hetian China
D11092 China
L25595 China
D11093 China
KS2 87 China
SAR 55 Pakistan
TW7E Taiwan
93G China
Tw4E Taiwan
TW8E Taiwan
HEV T1 China
Avian HEV USA
5 changes

Fig. 8C

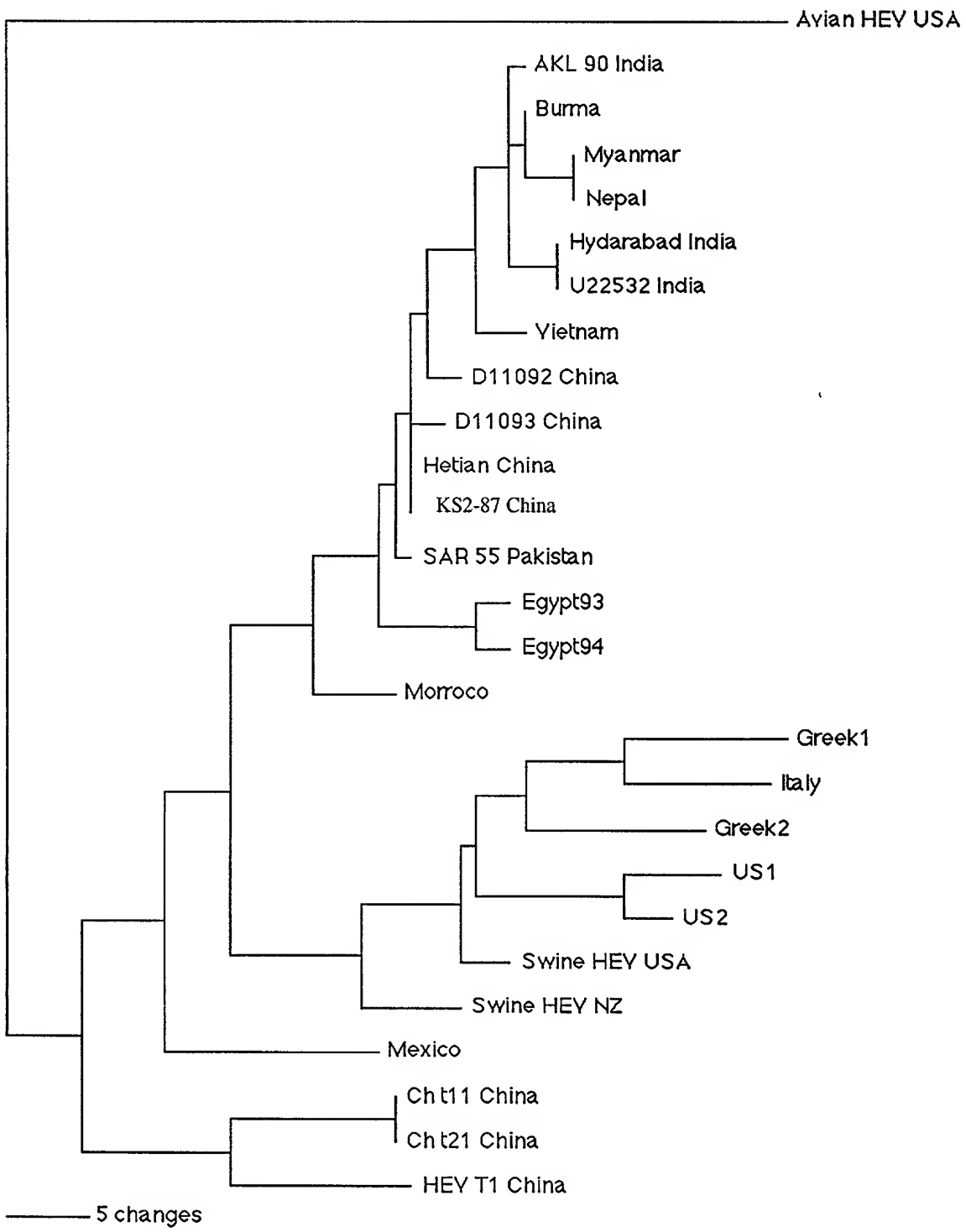

Avian HEV USA
AKL 90 India
Burma
Myanmar
Nepal
Hydarabad India
U22532 India
Vietnam
D11092 China
D11093 China
Hetian China
KS2-87 China
SAR 55 Pakistan
Egypt93
Egypt94
Morroco
Greek1
Italy
Greek2
US1
US2
Swine HEV USA
Swine HEV NZ
Mexico
Ch t11 China
Ch t21 China
HEV T1 China
5 changes

Fig. 9A

ACCAGCATTGGATTTCGATGGACGCTGTTTAACGAGCGCCGTTGATCTTGGG
TTGCAGCCTACCAGCTGGCGCACCGTATCCCACCGTTGCCCTTGGGACGTTT
GTATATTTTTGCGTACTGATTATCCGACTATCACCACAACCAGTAGGGTGCT
GCGGTCTGTTGTGTTTACCGGTGAAACCATTGGTCAGAAGATAGTGTTTACC
CAGGTGGCCAAGCAGTCGAACCCCGGGTCCATAACGGTCCATGAGGCGCAG
GGCAGTACTTTTGATCAGACTACTATAATCGCCACGTTAGATGCTCGTGGCC
TTATAGCTTCATCTCGCGCGCATGCCATAGTTGCGCTAACCCGCCACCGGGA
GCGCTGTAGTGTGATTGATGTTGGTGGGGTGCTGGTCGAGATTGGAGTTACT
GATGCCATGTTTAACAATATCGAAATGCAGCTTGTGCGACCTGATGCTGCAG
CCCCTGCCGGGGTGCTACGAGCCCCAGACGACACCGTGGATGGCTTGTTGGA
CATACCCCCGGCCCACACTGATGTAGCGGCGGTGTTAACAGCTGAGGCGATT
GGGCATGCGCCCCTTGAATTGGCCGCCATAAATCCACCCGGGCCTGTATTGG
AGCAGGGCCTATTATACATGCCGGCCAGGCTTGATGGGCGTGATGAGGTTGT
TAAGCTCCAGCTGTCGGATACTGTACACTGCCGCCTGGCTGCACCCACTAGC
CGTCTTGCGGTGATTAACACATTGGTTGGGCGGTACGGTAAAGCCACTAAGC
TGCCTGAGGTTGAATATGACTTAATGGACACTATTGCGCAGTTCTGGCATCA
TATCGGACCAATCAACCCCTCAACACTGGAGTATGCAGAGATGTGCGAGGC
CATGCTTAGTAAGGGCCAGGATGGGTCCTTGATTGTACATCTGGATTTACAG
GATGCTGATTGTTCTCGCATAACATTCTTCCAGAAGGACTGCGCTAAATTTA
CGCTGGATGACCCTGTTGCACACGGTAAAGTGGGACAGGGGATATCTGCGT
GGCCGAAAACTTTGTGTGCACTTTTCGGCCCCTGGTTCCGGGCTATAGAGAA
GCACCTTGTGGCTGGGTTACCCCCAGGTTATTACTATGGGGACCTGTACACG
GAAGCCGATCTGCATCGTTCTGTGCTTTGCGCGCCTGCTGGTCACCTTGTTTT
TGAGAATGATTTCTCAGAGTTTGACTCAACGCAGAATAATGTGTCCCTTGAT
CTCGAATGTGAATTGATGCGCAGGTTTGGGATGCCCGATTGGATGGTAGCCT
TGTACCATCTTGTTCGATCATACTGGCTCTTGGTTGCCCCGAAAGAAGCCCTT
CGTGGCTGTTGGAAAAAACACTCTGGTGAGCCGGGCACCCTTTTGTGGAATA
CAGTTTGGAACATGACTGTGTTGCATCATGTTTATGAGTTTGATCGACCAAG
TGTGTTGTGTTTCAAAGGTGATGATAGTGTCGTTGTCTGTGAATCGGTGCGC

Fig. 9B

GCCCGTCCAGAGGGCGTTAGTCTCGTGGCAGACTGCGGGCTAAAAATGAAG
GACAAGACCGGCCCGTGTGGCGCCTTTTCCAACCTGCTGATCTTCCCGGGAG
CTGGTGTTGTCTGCGACCTGTTACGGCAGTGGGGCCGCTTGACTGACAAGAA
CTGGGGGCCCGACATTCAGCGGATGCAGGACCTTGAGCAAGCGTGTAAGGA
TTTTGTTGCACGTGTTGTAACTCAGGGTAAAGAGATGTTGACCATCCAGCTT
GTGGCGGGTTATTATGGTGTGGAAGTTGGTATGGTTGAGGTGGTTTGGGGGG
CTTTGAAGGCCTGCGCCGCAGCCCGCGAGACCCTAGTGACCAACAGGTTGCC
GGTACTAAACTTATCTAAGGAGGACTGAACAAATAACAATCATTATGCAGT
CTGCGCGTCCATGTGCCTTAGCTGCCAGTTCTGGTGTTTGGAGTGCCAGGAA
AGTGGGGTGGGATGTCGCTGTGTAGATTGTTGCTCATGCTTGCAATGTGCTG
CGGGGTGTCAAGGGGCTCCCAAACGCTCCCAGCCGGAGGCAGGCGTGGCCA
GCGCCGCCGTGACAATTCAGCCCAGTGGAGCACTCAACAACGCCCCGAGGG
AGCCGTCGGCCCCGCCCCTCTCACAGACGTTGTCACCGCGGCAGGTACTCGC
ACGGTACCAGATGTAGATCAAGCCGGTGCCGTGCTGGTGCGCCAGTATAATC
TAGTGACCAGCCCGTTAGGCCTGGCCACCCTTGGTAGCACCAATGCCTTGCT
TTATGCCGCACCGGTGTCACCGTTAATGCCGCTTCAGGACGGCACGACGTCT
AATATCATGAGCACGGAGTCTAGCAACTATGCTCAATACCGTGTACAGGGCC
TAACTGTCCGCTGGCGCCCAGTTGTGCCAAATGCGGTGGGCGGCTTCTCTAT
AAGCATGGCCTATTGGCCCCAGACAACATCCACCCCTACAAGCATTGACATG
AATTCCATCACGTCCACTGACGTCCGTGTGGTGCTTCAGCCGGGCTCTGCTG
GTTTGCTGACTATACCACATGAGCGTTTGGCGTATAAGAACAATGGTTGGCG
GTCCGTCGAAACGGTATCCGTCCCACAGGAGGATGCCACGTCCGGCATGCTC
ATGGTTTGTGTCCACGGGACCCCCTGGAATAGTTATACCAATAGTGTTTACA
CCGGGCCGCTTGGTATGGTTGATTTTGCCATAAAGTTACAGCTAAGGAACTT
GTCGCCCGGTAATACAAATGCCAGGGTCACCCGTGTGAAGGTGACGGCCCC
ACATACCATCAAGGCTGACCCATCTGGTGCTACCATAACAACAGCAGCTGCG
GCCAGGTTTATGGCGGATGTGCGTTGGGGCTTGGGCACTGCTGAGGATGGCG
AAATTGGTCACGGCATCCTTGGTGTTCTGTTTAACCTGGCGGACACAGTTTT
AGGTGGCTTGCCCTCGACACTGCTGCGGGCGGCGAGTGGTCAGTACATGTAC

Fig. 9C

GGCCGGCCTGTGGGGAACGCGAACGGCGAGCCTGAGGTGAAACTGTATATG
TCGGTTGAGGATGCCGTTAACGATAAACCTATTATGGTCCCCCATGACATCG
ACCTCGGGACCAGCACTGTCACCTGCCAGGACTATGGGAATCAGCATGTGG
ATGACCGCCCATCCCCGGCCCCGGCCCCTAAGCGAGCTTTGGGCACCCTAAG
GTCAGGGGATGTGTTGCGTATTACTGGCTCCATGCAGTATGTGACTAACGCC
GAGTTGTTACCGCAGAGTGTGTCACAGGGGTACTTTGGGGCCGGCAGCACC
ATGATGGTGCATAATTTGATCACTGGTGTGCGCGCCCCCGCCAGTTCAGTCG
ACTGGACGAAGGCAACAGTGGATGGGGTCCAGGTGAAGACTGTCGATGCTA
GTTCTGGGAGTAATAGGTTTGCAGCGTTACCTGCATTTGGAAAGCCAGCTGT
GTGGGGGCCCCAGGGCGCTGGGTATTTCTACCAGTATAACAGCACCCACCA
GGAGTGGATTTATTTTCTTCAGAATGGTAGCTCCGTGGTTTGGTATGCATATA
CTAATATGTTGGGCCAGAAGTCAGATACATCCATTCTTTTTGAGGTCCGGCC
AATCCAAGCTAGTGATCAGCCTTGGTTTTTGGCACACCACACTGGCGGCGA
TGACTGTACCACCTGTCTGCCTCTGGGGTTAAGAACATGTTGCCGCCAGGCG
CCAGAAGACCAGTCACCTGAGACGCGCCGGCTCCTAGACCGGCTTAGTAGG
ACATTCCCCTCACCACCCTAATGTCGTGGTTTTGGGGTTTTAGGTTGATTTTC
TGTATCTGGGCGTAATTGCCCCTATGTTTAATTTATTGTGATTTTTATAACTG
TTCATTTGATTATTTATGAAATCCTCCCATCTCGGGCATAGTAAAAAAAAAAA
AAAAA

Fig. 10

PALDFDGRCLTSAVDLGLQPTSWRTVSHRCPWDVCIFLRTDYPTITTTSRVLRSV
VFTGETIGQKIVFTQVAKQSNPGSITVHEAQGSTFDQTTIIATLDARGLIASSRAH
AIVALTRHRERCSVIDVGGVLVEIGVTDAMFNNIE

Fig. 11

ACCAGCATTGGATTTCGATGGACGCTGTTTAACGAGCGCCGTTGATCTTGGG
TTGCAGCCTACCAGCTGGCGCACCGTATCCCACCGTTGCCCTTGGGACGTTT
GTATATTTTTGCGTACTGATTATCCGACTATCACCACAACCAGTAGGGTGCT
GCGGTCTGTTGTGTTTACCGGTGAAACCATTGGTCAGAAGATAGTGTTTACC
CAGGTGGCCAAGCAGTCGAACCCCGGGTCCATAACGGTCCATGAGGCGCAG
GGCAGTACTTTTGATCAGACTACTATAATCGCCACGTTAGATGCTCGTGGCC
TTATAGCTTCATCTCGCGCGCATGCCATAGTTGCGCTAACCCGCCACCGGGA
GCGCTGTAGTGTGATTGATGTTGGTGGGGTGCTGGTCGAGATTGGAGTTACT
GATGCCATGTTTAACAATATCGAA

Fig. 12

LVRPDAAAPAGVLRAPDDTVDGLLDIPPAHTDVAAVLTAEAIGHAPLELAAINP
PGPVLEQGLLYMPARLDGRDEVVKLQLSDTVHCRLAAPTSRLAVINTLVGRYG
KATKLPEVEYDLMDTIAQFWHHIGPINPSTLEYAEMCEAMLSKGQDGSLIVHLD
LQDADCSRITFFQKDCAKFTLDDPVAHGKVGQGISAWPKTLCALFGPWFRAIEK
HLVAGLPPGYYYGDLYTEADLHRSVLCAPAGHLVFENDFSEFDSTQNNVSLDL
ECELMRRFGMPDWMVALYHLVRSYWLLVAPKEALRGCWKKHSGEPGTLLWN
TVWNMTVLHHVYEFDRPSVLCFKGDDSVVVCESVRARPEGVSLVADCGLKMK
DKTGPCGAFSNLLIFPGAGVVCDLLRQWGRLTDKNWGPDIQRMQDLEQACKDF
VARVVTQGKEMLTIQLVAGYYGVEVGMVEVVWGALKACAAARETLVTNRLP
VLNLSKED

Fig. 13

gcttgtgcgacctgatgctgcagcccctgccggggtgctacgagccccagacgacaccgtggatggcttgttggacataccc
ccggcccacactgatgtagcggcggtgttaacagctgaggcgattgggcatgcgccccttgaattggccgccataaatccacc
cgggcctgtattggagcagggcctattatacatgccggccaggcttgatgggcgtgatgaggttgttaagctccagctgtcgga
tactgtacactgccgcctggctgcacccactagccgtcttgcggtgattaacacattggttgggcggtacggtaaagccactaa
gctgcctgaggttgaatatgacttaatggacactattgcgcagttctggcatcatatcggaccaatcaacccctcaacactggagt
atgcagagatgtgcgaggccatgcttagtaagggccaggatgggtccttgattgtacatctggatttacaggatgctgattgttct
cgcataacattcttccagaaggactgcgctaaatttacgctggatgaccctgttgcacacggtaaagtgggacaggggatatct
gcgtggccgaaaactttgtgtgcacttttcggcccctggttccgggctatagagaagcaccttgtggctgggttacccccaggtt
attactatggggacctgtacacggaagccgatctgcatcgttctgtgctttgcgcgcctgctggtcaccttgtttttgagaatgattt
ctcagagtttgactcaacgcagaataatgtgtcccttgatctcgaatgtgaattgatgcgcaggtttgggatgcccgattggatgg
tagccttgtaccatcttgttcgatcatactggctcttggttgccccgaaagaagcccttcgtggctgttggaaaaaacactctggtg
agccgggcacccttttgtggaatacagtttggaacatgactgtgttgcatcatgtttatgagtttgatcgaccaagtgtgttgtgtttc
aaaggtgatgatagtgtcgttgtctgtgaatcggtgcgcgcccgtccagagggcgttagtctcgtggcagactgcgggctaaa
aatgaaggacaagaccggcccgtgtggcgccttttccaacctgctgatcttcccgggagctggtgttgtctgcgacctgttacg
gcagtggggccgcttgactgacaagaactgggggcccgacattcagcggatgcaggaccttgagcaagcgtgtaaggatttt
gttgcacgtgttgtaactcagggtaaagagatgttgaccatccagcttgtggcgggttattatggtgtggaagttggtatggttg
aggtggtttgggggggctttgaaggcctgcgccgcagcccgcgagaccctagtgaccaacaggttgccggtactaaacttatc
taaggaggac

Fig. 14

MSLCRLLLMLAMCCGVSRGSQTLPAGGRRGQRRRDNSAQWSTQQRPEGAVGP
APLTDVVTAAGTRTVPDVDQAGAVLVRQYNLVTSPLGLATLGSTNALLYAAPV
SPLMPLQDGTTSNIMSTESSNYAQYRVQGLTVRWRPVVPNAVGGFSISMAYWP
QTTSTPTSIDMNSITSTDVRVVLQPGSAGLLTIPHERLAYKNNGWRSVETVSVPQ
EDATSGMLMVCVHGTPWNSYTNSVYTGPLGMVDFAIKLQLRNLSPGNTNARV
TRVKVTAPHTIKADPSGATITTAAAARFMADVRWGLGTAEDGEIGHGILGVLF
NLADTVLGGLPSTLLRAASGQYMYGRPVGNANGEPEVKLYMSVEDAVNDKPI
MVPHDIDLGTSTVTCQDYGNQHVDDRPSPAPAPKRALGTLRSGDVLRITGSMQ
YVTNAELLPQSVSQGYFGAGSTMMVHNLITGVRAPASSVDWTKATVDGVQVK
TVDASSGSNRFAALPAFGKPAVWGPQGAGYFYQYNSTHQEWIYFLQNGSSVV
WYAYTNMLGQKSDTSILFEVRPIQASDQPWFLAHHTGGDDCTTCLPLGLRTCC
RQAPEDQSPETRRLLDRLSRTFPSPP

Fig. 15

atgtcgctgtgtagattgttgctcatgcttgcaatgtgctgcggggtgtcaaggggctcccaaacgctcccagccggaggcagg
cgtggccagcgccgccgtgacaattcagcccagtggagcactcaacaacgccccgagggagccgtcggccccgcccctct
cacagacgttgtcaccgcggcaggtactcgcacggtaccagatgtagatcaagccggtgccgtgctggtgcgccagtataatc
tagtgaccagcccgttaggcctggccacccttggtagcaccaatgccttgctttatgccgcaccggtgtcaccgttaatgccgct
tcaggacggcacgacgtctaatatcatgagcacggagtctagcaactatgctcaataccgtgtacagggcctaactgtccgctg
gcgcccagttgtgccaaatgcggtgggcggcttctctataagcatggcctattggccccagacaacatccacccctacaagcat
tgacatgaattccatcacgtccactgacgtccgtgtggtgcttcagccgggctctgctggtttgctgactataccacatgagcgttt
ggcgtataagaacaatggttggcggtccgtcgaaacggtatccgtcccacaggaggatgccacgtccggcatgctcatggttt
gtgtccacgggacccccctggaatagttataccaatagtgtttacaccgggccgcttggtatggttgattttgccataaagttacag
ctaaggaacttgtcgcccggtaatacaaatgccagggtcacccgtgtgaaggtgacggccccacataccatcaaggctgacc
catctggtgctaccataacaacagcagctgcggccaggtttatggcggatgtgcgttggggcttgggcactgctgaggatggc
gaaattggtcacggcatccttggtgttctgtttaacctggcggacacagttttaggtggcttgccctcgacactgctgcgggcgg
cgagtggtcagtacatgtacggccggcctgtggggaacgcgaacggcgagcctgaggtgaaactgtatatgtcggttgagga
tgccgttaacgataaacctattatggtcccccatgacatcgacctcgggaccagcactgtcacctgccaggactatgggaatca
gcatgtggatgaccgcccatccccggccccggcccctaagcgagctttgggcaccctaaggtcaggggatgtgttgcgtatta
ctggctccatgcagtatgtgactaacgccgagttgttaccgcagagtgtgtcacaggggtactttggggccggcagcaccatg
atggtgcataatttgatcactggtgtgcgcgcccccgccagttcagtcgactggacgaaggcaacagtggatggggtccaggt
gaagactgtcgatgctagttctgggagtaataggtttgcagcgttacctgcatttggaaagccagctgtgtgggggccccaggg
cgctgggtatttctaccagtataacagcacccaccaggagtggatttattttcttcagaatggtagctccgtggtttggtatgcatat
actaatatgttgggccagaagtcagatacatccattctttttgaggtccggccaatccaagctagtgatcagccttggtttttggca
caccacactggcggcgatgactgtaccacctgtctgcctctggggttaagaacatgttgccgccaggcgccagaagaccagtc
acctgagacgcgccggctcctagaccggcttagtaggacattcccctcaccaccctaa

Fig. 16

MCLSCQFWCLECQESGVGCRCVDCCSCLQCAAGCQGAPKRSQPEAGVASAAV
TIQPSGALNNAPREPSAPPLSQTLSPRQVLARYQM

Fig. 17

atgtgccttagctgccagttctggtgtttggagtgccaggaaagtggggtgggatgtcgctgtgtagattgttgctcatgcttgca
atgtgctgcggggtgtcaaggggctcccaaacgctcccagccggaggcaggcgtggccagcgccgccgtgacaattcagc
ccagtggagcactcaacaacgccccgagggagccgtcggccccgcccctctcacagacgttgtcaccgcggcaggtactcg
cacggtaccagatgtag

Fig. 18A

Fig. 18B

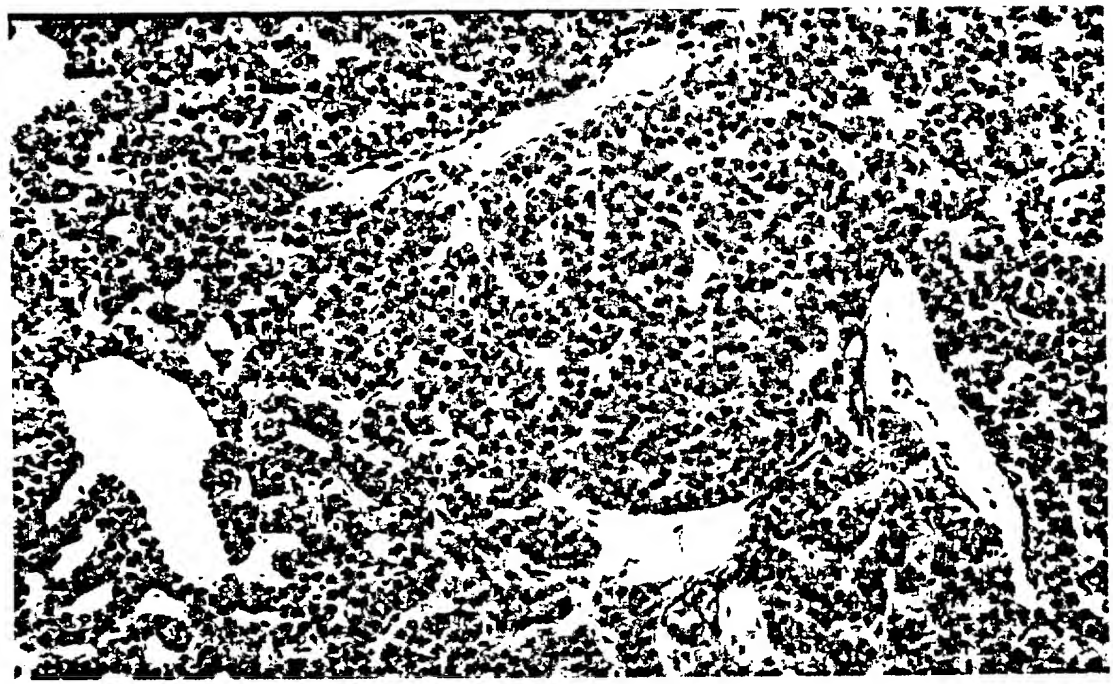


Fig. 19A

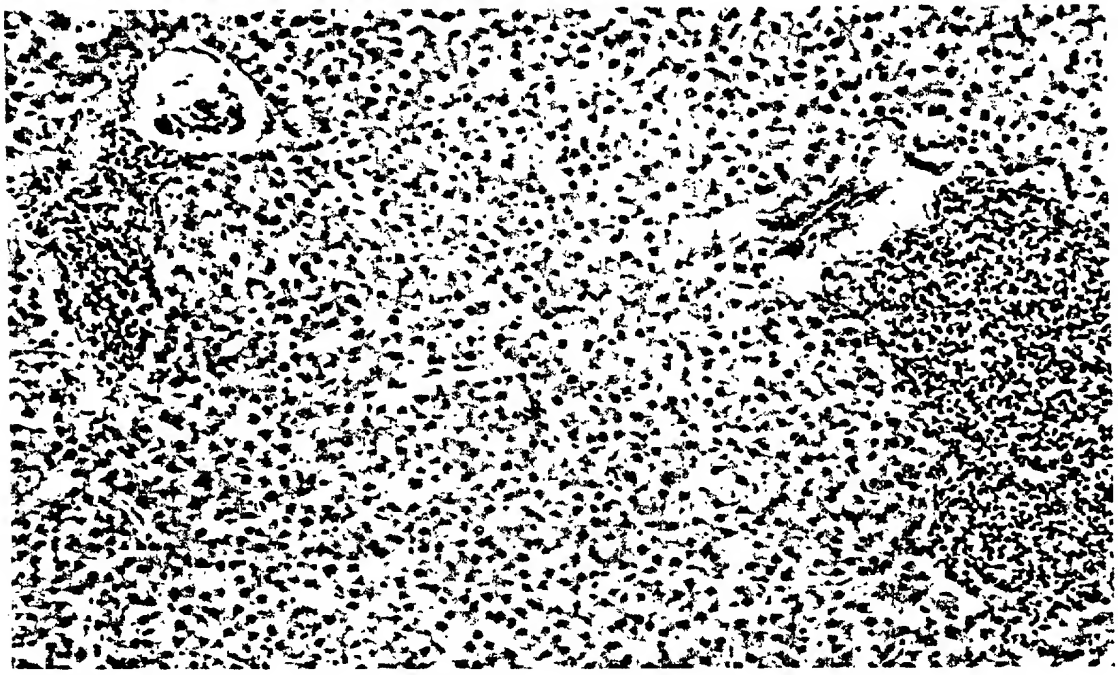


Fig. 19B

Fig. 20

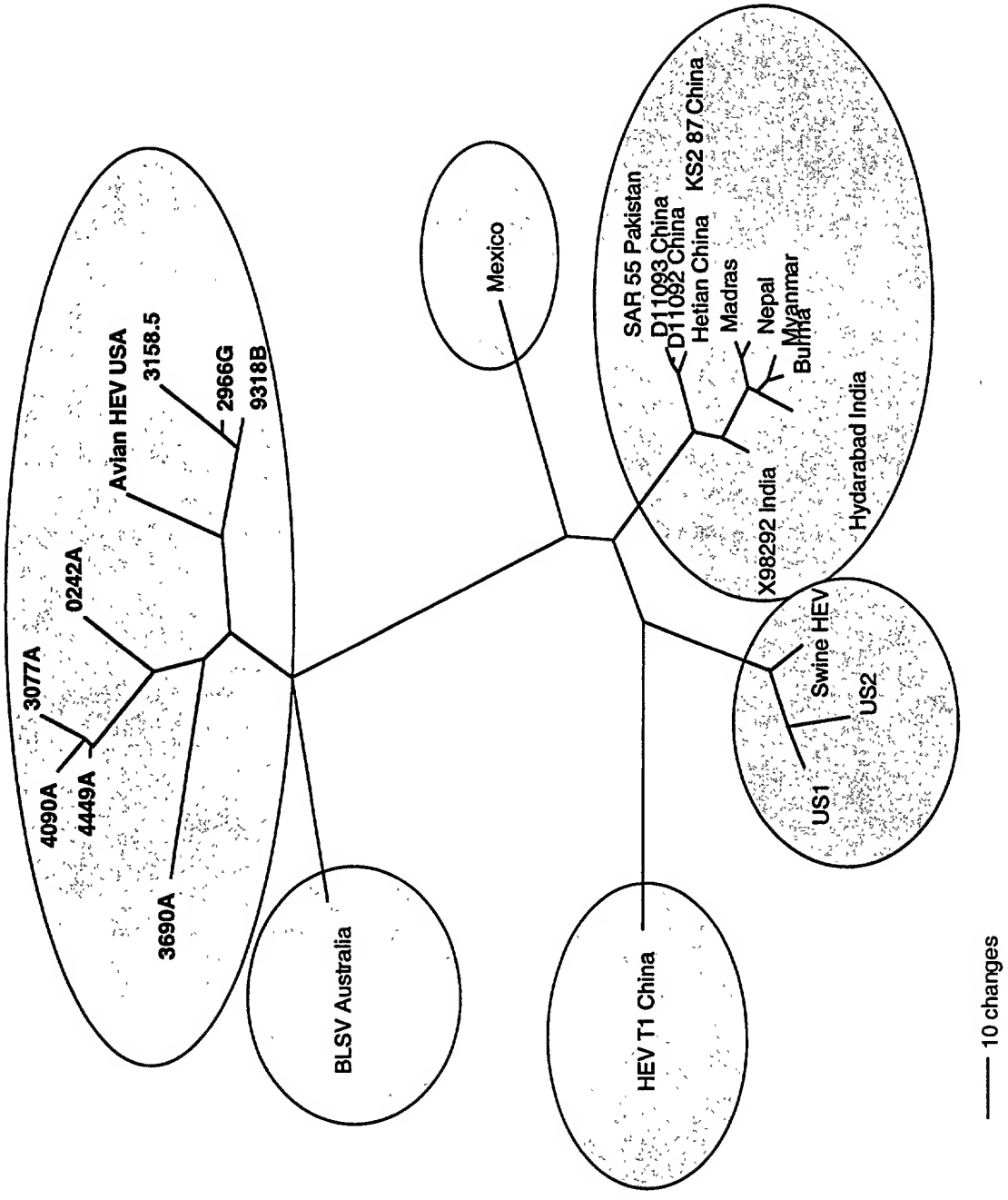
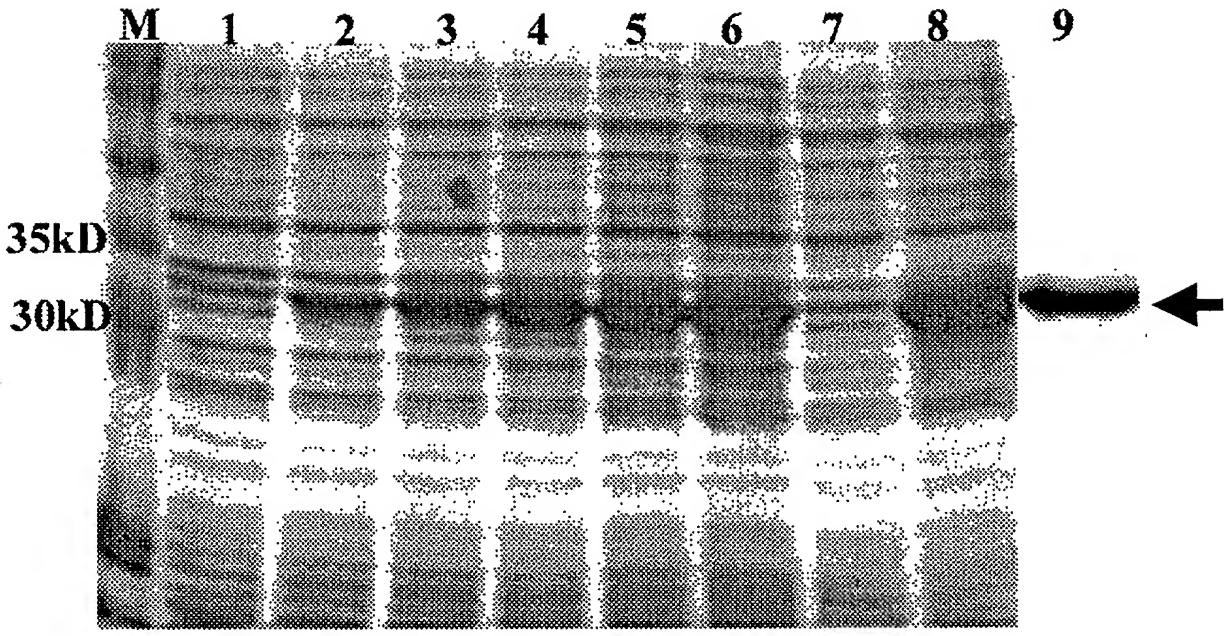

3077A
4090A
4449A
0242A
3690A
Avian HEV USA
3158.5
2966G
9318B
BLSV Australia
Mexico
SAR 55 Pakistan
D11093 China
D11092 China
Hetian China
KS2 87 China
Madras
Nepal
Myanmar
Burma
X98292 India
Hydarabad India
Swine HEV
US2
US1
HEV T1 China
10 changes

Fig. 21A



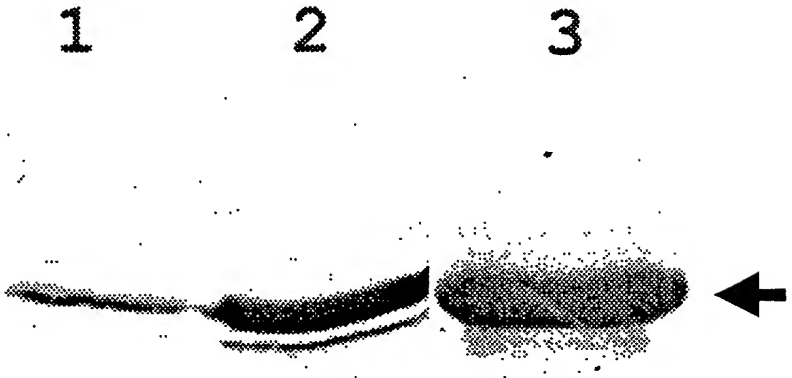


Fig. 21B

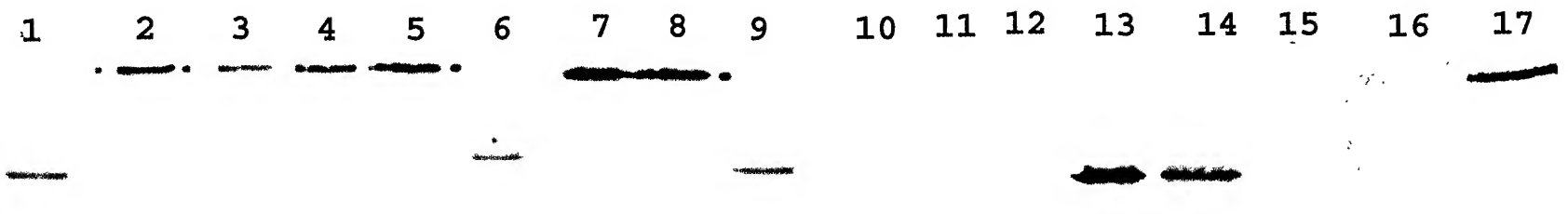


Fig. 22A

Fig. 22B

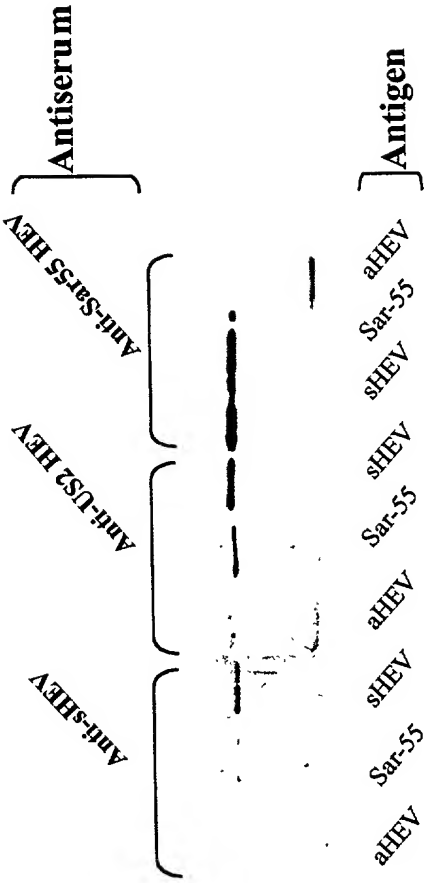


Fig. 22C

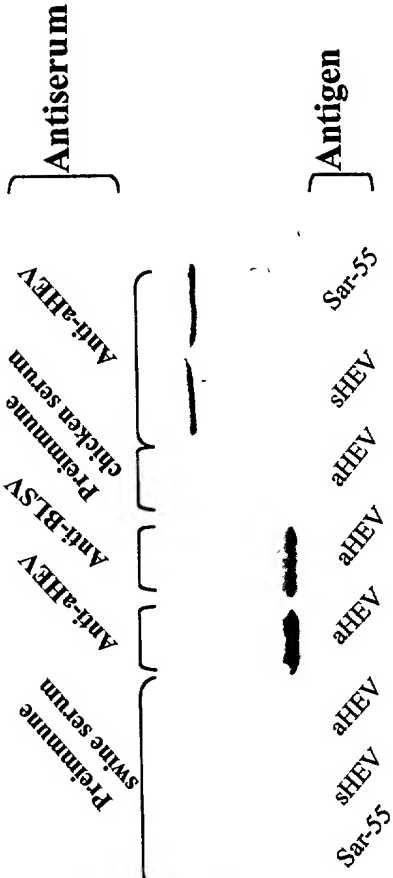


Fig. 23

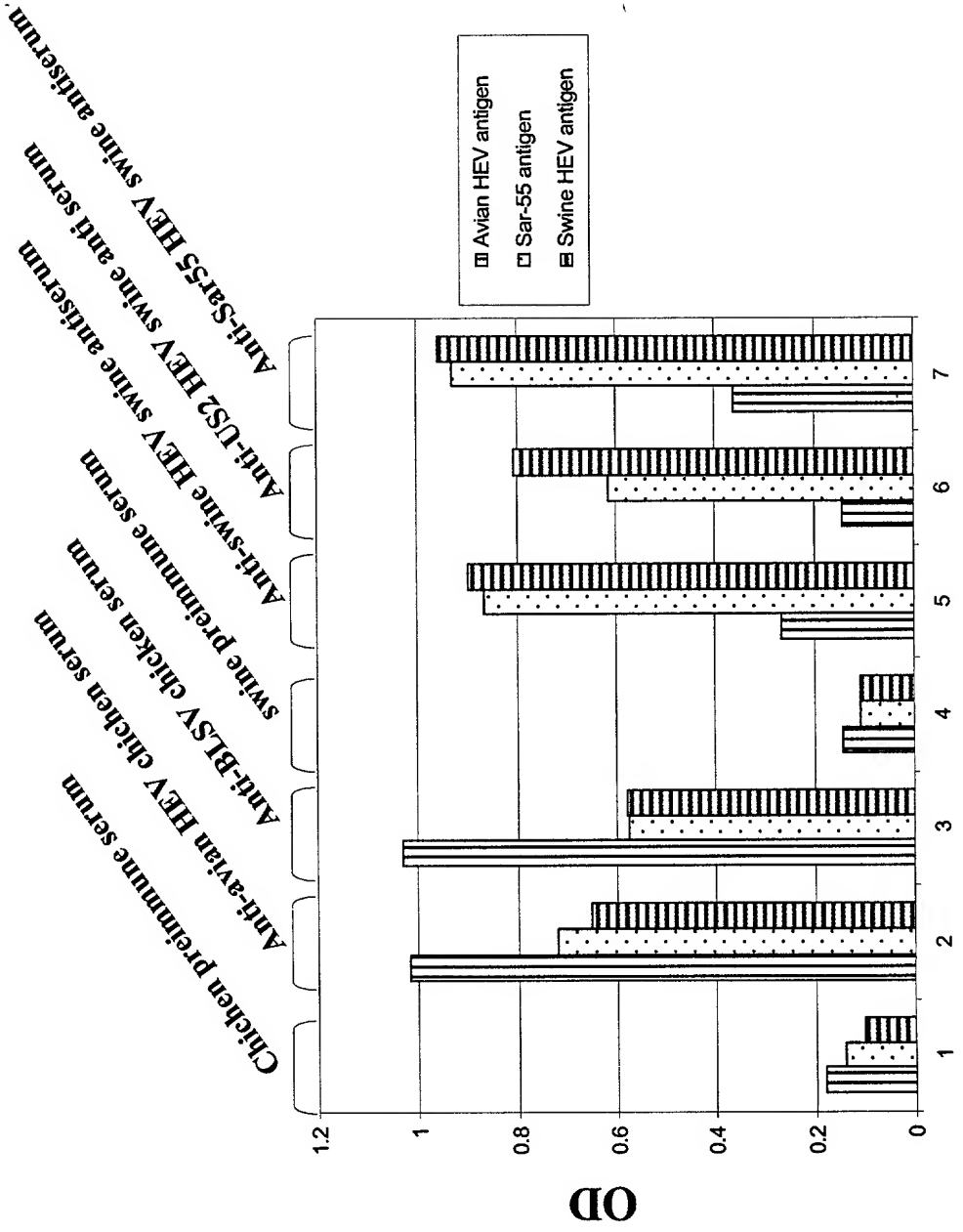

Avian HEV antigen
Sar-55 antigen
Swine HEV antigen
OD
1.2
1
0.8
0.6
0.4
0.2
0
1
2
3
4
5
6
7
Chicken preimmune serum
Anti-avian HEV chicken serum
Anti-BLSV chicken serum
swine preimmune serum
Anti-swine HEV swine antiserum
Anti-US2 HEV swine anti serum
Anti-Sar55 HEV swine antiserum

Fig. 24

```
Avian HEV QYMYGRPVGNANGEPEVKLYMSVEDAVNDKPIMVPHDIDLGTSTVTCQDY
Swine HEV .LF.S...VS.....T....T...N.QQ..G.TI.......D.R.VI...
US-2      .LF.S...VS.....T....T...N.QQ..G.TI.......D.R.VI...
Sar-55    .LF.S...VS.....T....T...N.QQ..G.AI.......E.R.VI...

Avian HEV GNQHVDDRPSPAPAPKRALGTLRSGDVLRITGSMQYVTNAELLPQSVSQG
Swine HEV D...EQ...T.S...S.PFSV..AN...WLSLTA---AEYDQTTYGS.TN
US-2      D...EQ...T.S...S.PFSV..AN...WLSLTA---AEYDQTTYGS.TN
Sar-55    D...EQ...T.S...S.PFSV..AN...WLSLTA---AEYDQS TYGS.T

Avian HEV YFGAGSTMMVHNLITGVRAPASSVDWTKATVDGVQVKTVDASSGSNRFAAL
Swine HEV PMYVSD.VTLV.VA..AQ.V.R.L..S.V.L..RPLT.IQQY.KT--.YV.
US-2      PMYVSD.VTLV.VA..AQ.V.R.L..S.V.L..RPLT.IQQY.KT--.YV.
Sar-55    PVYVSDSVTLV.VA..AQ.V.R.L....V.L..RPLS.IQQY.KT--.FV.

Avian HEV PAFGKPAVWGP--QGAGYFYQYNSTHQEWIYFLQN-GSSVVWYAYTNMLGQ
Swine HEV .LR..LSF.EAGTTK...PYN..T.ASDQ.LIENAA.HRVAIST..TS..A
US-2      .LR..LSF.EAGTTK...PYN..T.ASDQ.LIENAA.HRVAIST..TS..A
Sar-55    .LR..LSF.EAGTTK...PYN..T.ASDQLLIENAA.HRVAIST..TS..A

Avian HEV K----SDTSILFEVRPIQASDQ--PWFLAHHTGGDDCTTCLPLGLRTCCRQ
Swine HEV GPTSI.AVGV.APHSALAVLEDTVDYPARA..FD.F.PE.RT...QG.AF.
US-2      GPTSI.AVGV.APHSALAVLEDTIDYPARA..FD.F.PE.RT...QG.AF.
Sar-55    GPVSI.AVAV.APHSVLALLEDTMDYPARA..FD.F.PE.RP...QG.AF.

Avian HEV APEDQSPETRRLLDRLSRTFPSPP
Swine HEV S---TIA.LQ..KMKVGK.RE.--
US-2      S---TIA.LQ..KMKVGK.RE.--
Sar-55    S---TVA.LQ..KMKVGK.REL--
```

Fig. 25A

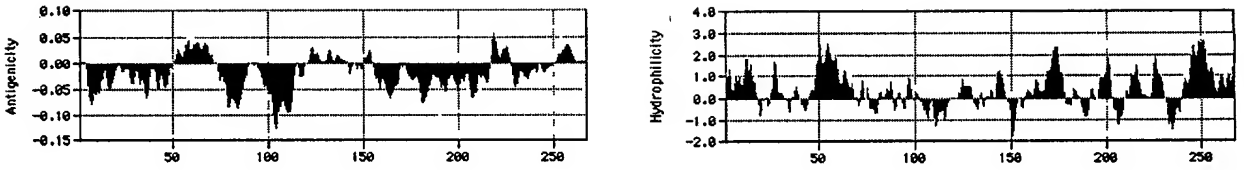


Fig. 25B

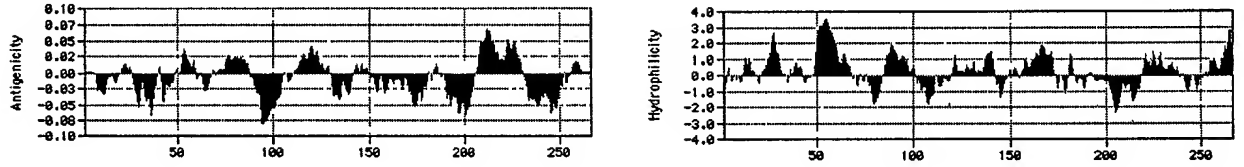


Fig. 25C

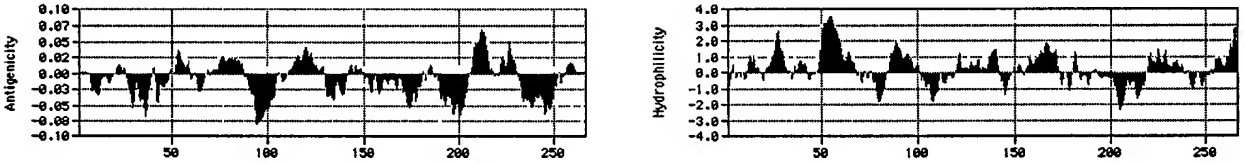


Fig. 25D